

Claims:

- 1 1. A method, comprising:
2 placing a first micro-actuator part in a molding of a fixture;
3 coupling a second micro-actuator part to the first micro-actuator part; and
4 using the fixture to maintain a structure of the first micro-actuator part and the second
5 micro-actuator part.
- 1 2. The method of claim 1, further comprising holding the first micro-actuator part in place
2 with an embedded vacuum nozzle system.
- 1 3. The method of claim 1, further comprising positioning the second micro-actuator part
2 relative to the first micro-actuator part for coupling using a first mobile vacuum nozzle system
- 1 4. The method of claim 1, wherein the first micro-actuator part is a micro-actuator frame.
- 1 5. The method of claim 4, wherein the micro-actuator frame is metal.
- 1 6. The method of claim 4, wherein the molding is a shaped protrusion that matches the
2 interior of the first micro-actuator frame.
- 1 7. The method of claim 4, wherein the second micro-actuator part is a first strip of
2 piezoelectric material.

1 8. The method of claim 7, further comprising positioning a second strip of piezoelectric
2 material with a second mobile vacuum nozzle system.

1 9. The method of claim 7, further comprising holding a second strip of piezoelectric
2 material with the first mobile vacuum nozzle system.

1 10. The method of claim 1, wherein the molding is a shaped indentation that matches the
2 exterior of the first micro-actuator part, the second micro-actuator part, and a third micro-
3 actuator part.

1 11. The method of claim 10, wherein the first micro-actuator part is a first strip of
2 piezoelectric material and the third micro-actuator part is a second strip of piezoelectric material.

1 12. The method of claim 10, wherein the second micro-actuator part is a micro-actuator
2 frame.

1 13. The method of claim 12, wherein the micro-actuator frame is metal.

1 14. The method of claim 1, further comprising maintaining the structure of multiple frames
2 simultaneously with multiple moldings.

1 15. The method of claim 1, further comprising observing the fixture with a camera system.

1 16. The method of claim 1, further comprising applying an adhesive between the first micro-
2 actuator part and the second micro-actuator part.

1 17. The method of claim 16, further comprising curing the adhesive is cured with ultraviolet
2 radiation.

1 18. A fixture, comprising:
2 a molding to hold a first micro-actuator part to be coupled to a second micro-actuator part
3 and shaped to maintain a structure of the first micro-actuator part and the second micro-actuator
4 part.

1 19. The fixture of claim 18, further comprising an embedded vacuum nozzle system to hold
2 the first micro-actuator part in place.

1 20. The fixture of claim 18, wherein a first mobile vacuum nozzle system positions the
2 second micro-actuator part relative to the first micro-actuator part for coupling.

1 21. The fixture of claim 18, wherein the first micro-actuator part is a micro-actuator frame.

1 22. The fixture of claim 21, wherein the micro-actuator frame is metal.

- 1 23. The fixture of claim 21, wherein the molding is a shaped protrusion that matches the
2 interior of the micro-actuator frame.
- 1 24. The fixture of claim 21, wherein the second micro-actuator part is a first strip of
2 piezoelectric material.
- 1 25. The fixture of claim 24, wherein a second strip of piezoelectric material is positioned
2 with a second mobile vacuum nozzle system.
- 1 26. The fixture of claim 24, wherein the first mobile vacuum nozzle system holds a second
2 strip of piezoelectric material .
- 1 27. The fixture of claim 18, wherein the molding is a shaped indentation that matches the
2 exterior of the first micro-actuator part, the second micro-actuator part, and a third micro-
3 actuator part.
- 1 28. The fixture of claim 27, wherein the first micro-actuator part is a first strip of
2 piezoelectric material and the third micro-actuator part is a second strip of piezoelectric material.
- 1 29. The fixture of claim 27, wherein the second micro-actuator part is a micro-actuator frame
- 1 30. The fixture of claim 29, wherein the micro-actuator frame is metal.

1 31. The fixture of claim 18, further comprising multiple moldings capable of maintaining the
2 structure of multiple frames simultaneously.

1 32. The fixture of claim 18, wherein a camera system observes the fixture.

1 33. The fixture of claim 18, wherein an adhesive applicator applies an adhesive between the
2 first micro-actuator part and the second micro-actuator part.

1 34. The fixture of claim 33, wherein the adhesive is cured with ultraviolet radiation.

1 35. A system, comprising:
2 an embedded vacuum nozzle system to hold a first micro-actuator part to be coupled to a
3 second micro-actuator part;
4 a first mobile vacuum nozzle system positions the second micro-actuator part relative to
5 the first micro-actuator part for coupling; and
6 a molding shaped to maintain a structure of the first micro-actuator part and the second
7 micro-actuator part.

1 36. The system of claim 35, wherein the molding is a shaped protrusion that matches the
2 interior of the first micro-actuator part.

1 37. The system of claim 35, wherein the first micro-actuator part is a micro-actuator frame.

- 1 38. The system of claim 37, wherein the micro-actuator frame is metal.
- 1 39. The system of claim 37, wherein the second micro-actuator part is a first strip of
2 piezoelectric material.
- 1 40. The system of claim 39, further comprising a second mobile vacuum nozzle system to
2 position a second strip of piezoelectric material.
- 1 41. The system of claim 39, wherein the first mobile vacuum nozzle system holds a second
2 strip of piezoelectric material.
- 1 42. The system of claim 35, wherein the molding is a shaped indentation that matches the
2 exterior of the first micro-actuator part, the second micro-actuator part, and a third micro-
3 actuator part.
- 1 43. The system of claim 42, wherein the first micro-actuator part is a first strip of
2 piezoelectric material and the third micro-actuator part is a second strip of piezoelectric material.
- 1 44. The system of claim 43, wherein the second micro-actuator part is a micro-actuator
2 frame.
- 1 45. The system of claim 44, wherein the micro-actuator frame is metal.

1 46. The system of claim 35, further comprising multiple moldings capable of maintaining the
2 structure of multiple frames simultaneously.

1 47. The system of claim 35, further comprising a camera system to observe the fixture.

1 48. The system of claim 35, further comprising an adhesive applicator to apply an adhesive
2 between the first micro-actuator part and the second micro-actuator part.

1 49. The system of claim 48, wherein curing the adhesive is cured with ultraviolet radiation.